# HISTORY OF MEDICINE IN MEMPHIS
# INTERVIEW WITH
# DR. LEMUEL WHITLEY DIGGS

BY - THELMA TRACY MABRY
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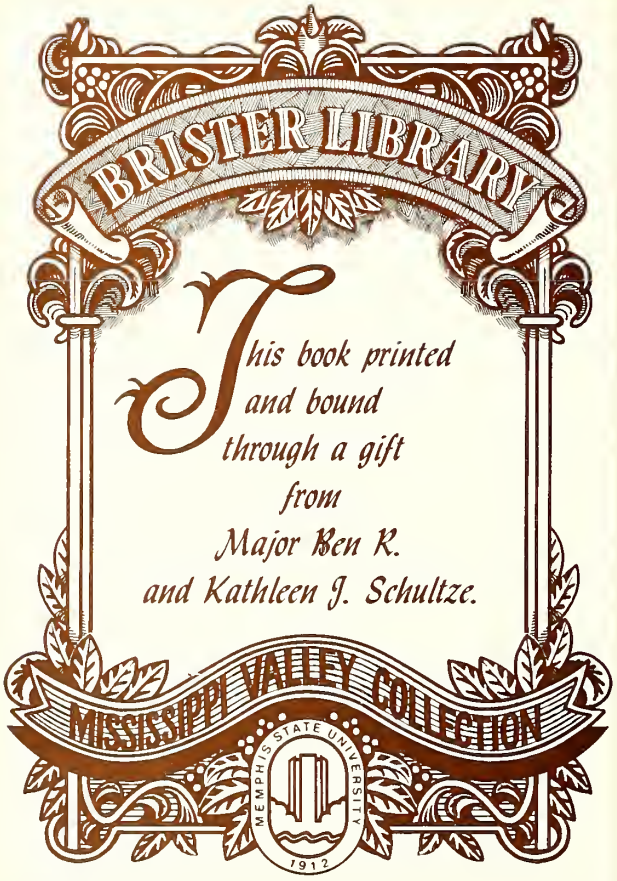
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# HISTORY OF MEDICINE IN MEMPHIS

## INTERVIEW WITH DR. LEMUEL WHITLEY DIGGS

## NOVEMBER 15, 1984

BY THELMA TRACY MABRY

ORAL HISTORY RESEARCH OFFICE

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PLACE Cordova, Tennessee

DATE November 15, 1984

L. W. Diggs

Dr. L.W. Diggs
(INTERVIEWEE)

Thelma Tracy Mabry

Thelma Tracy Mabry
(For the Mississippi Valley Archives of the John Willard Brister Library of Memphis State University)

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THIS IS MEMPHIS STATE UNIVERSITY ORAL HISTORY RESEARCH OFFICE PROJECT: "DR. LEMUEL WHITLEY DIGGS, ON SICKLE CELL ANEMIA; IN RETROSPECT." THE DATE IS NOVEMBER 15, 1984. THE INTERVIEW IS WITH DR. LEMUEL WHITLEY DIGGS AT CORDOVA, TENNESSEE. THE INTERVIEWER IS THELMA TRACY MABRY:

MRS. MABRY: Good morning, Dr. Diggs. I know that you are now the Goodman Professor of Medicine Emeritus at the University of Tennessee Center for the Health Sciences in Memphis and have held this title since 1968. Can you tell me when you first came to Memphis?

DR. DIGGS: Well, I came to Memphis in '29. In other words, I was...came here from an Internship and Residency at the University of Rochester. I was out seeking a job in various places and was given the opportunity to become an Assistant Professor in Pathology under Dr. Schmeisser at the Pathology Institute at the University of Tennessee and I taught the course in clinical pathology. I had worked previously at the University of Rochester on thalassemia, mainly, which is a disease very similar to sickle cell anemia, but affects Italian people; and also worked on pernicious anemia. As a matter of fact, I gave liver to patients in the first days of liver extract. As a matter of fact, when I came to Memphis, Dr. Whipple gave me some samples of liver extract to test out on people with iron deficiency anemia and pallegra which was then

present. But, when I came to Memphis, I came across cases of sickle cell anemia at the old Memphis General Hospital. And, I became so interested in sickle cell anemia that I gave this liver extract(s) to the patients with sickle cell anemia to no avail. But, I became interested at that time with sickle cell anemia as when I first came to Memphis ... the first few days I was here and have...nothing was known about the disease hardly at that time. There was no one had any interest in it. But, I figured it was an important disease, so I began to study it in every way I could possibly do so.

MRS. MABRY: Would you tell me exactly what is sickle cell disease?

DR. DIGGS: Well, sickle cell disease is a condition or disease in which people inherit from both of their parents an abnormal hemoglobin which is called sickle cell hemoglobin. And, this sickle cell hemoglobin is different from normal hemoglobin because it crystallizes inside of the red cells when the oxygen gets low on the red cells and these cells that have these sickles in, they block the blood vessel flow and it causes all kind of symptoms and signs and makes the condition. Sickle cell disease is a little broader than that because also it is combined with other hereditary conditions and - like hemoglobin C and spherocytosis and that type of thing so sickle cell disease is really a broad spectrum of diseases of which sickle cell anemia is the major component and the most serious form.

MRS. MABRY: Well, I was reading about the anemia that's called...caused by sickle cell anemia and it described it as sort of the sickled cells devouring the good red blood cells. Does that cause a lack of oxygen?

DR. DIGGS: No, that is not entirely true. Sickled cells mainly cause their damage on account of the fact that these cells have crystals inside of them that destroy the...that interfere with the structure of the red cells and make them more hemolyzed. But, they don't devour the cells. They make the cells abnormal so that they are destroyed, or devoured, by phagocytes and by the ordinary hemolytic system. So, it's the sickled cell structure inside of the red cell that is the main cause of the damage that's done.

MRS. MABRY: I see. Is sickle cell anemia different from the sickle cell trait?

DR. DIGGS: Yes. That's an important point because when a person inherits the hemoglobin S (the sickle cell hemoglobin) from one parent only and inherits the adult normal hemoglobin A from the other parent, he doesn't have much in the way of sickle cell hemoglobin inside of his red cells. It's a minor component. And, it requires a much greater decrease in the oxygen for these cells to crystallize. So, most patients with sickle cell trait do not have any trouble and live a long and useful life. They can under severe stress conditions, however, have difficulties. The sickle cell trait is a very common condition. In other words, it occurs in about 8% of the population and there are thousands of people with sickle cell trait in the Memphis area. If all of them were present, they

would more or less fill up the Liberty Bowl. In other words, if...the number of sickle cell anemia patients, on the other hand, we figure, is round about a thousand in Memphis. But, that's about...we have about 10 cases of leukemia, say, in Memphis, at a given period of time.

MRS. MABRY: I see. Now, you mention that mostly Black people and...Blacks have sickle cell disease. Are there any Whites at all?

DR. DIGGS: Yes. That's a very important point... question you ask, because many people think that sickle cell anemia and sickle cell trait; in other words, sickle cell diseases, are related to Africans only. As a matter of fact, the anthropological evidence is that it maybe didn't even start in Africa. It started in Asia Minor and came to Africa from that source. And, the sickle cell abnormality... what we call sickle cell hemoglobinopathies - are very prevalent in parts of India and in...all around the Mediterranean Sea and the Caspian Sea and the Black Sea and, of course, in the Caribbean Islands and in the shoreline around South America and in America, itself. The sickled cell mostly did come from Africa but in other countries it - the mixture of races has been very common but it is not a "limited to Black" disease and it should not be so considered.

MRS. MABRY: All right. Now, in case a family has a baby that they think might have sickle cell disease, how can they tell? Could they tell right away when a baby is born?

DR. DIGGS: No, when a baby is first born even though they have sickle cell anemia and are going to be...have trouble later on, when they are first born, much of their hemoglobin is not sickle cell hemoglobin or adult hemoglobin either. It's fetal hemoglobin... called hemoglobin F. And fetal hemoglobin doesn't sickle. It's only when this fetal hemoglobin wears out, or disappears, that the sickle cell comes in, so generally a baby who has sickle cell anemia looks quite healthy and rugged and well, thriving when he's first born but then five or six months in life or later on, he begins to have trouble. Generally, you can't pick it up because the symptoms are not specific. You pick it up in the laboratory by doing tests for sickle cell which are very simple and inexpensive and readily available.

MRS. MABRY: But, I understand that there is a hand/foot syndrome. How old does the baby have to be before that might show up?

DR. DIGGS: Well, generally that doesn't show up until the last months of the first year of life or in the first four or five years of life. That's an interesting phenomenon because the babies...when a baby is in infancy, the marrow, the bone marrow, is red in the ends of the fingers and in the hands and the sickled cells go into those areas where it's the furthest away from the heart and where the oxygen is lowest and where the hands are cold and exposed to the air. That is the place where the sickle cells begin to sickle

first. And, that's the reason why they have trouble in their hands and feet in the very early stages. Later on, the...the red bone marrow and the circulation in those hands leaves and goes to the other parts of the body and you don't have any trouble with the hands and feet, later on, but it's in the very early days these kids have very painful and swollen hands and cry and have high fever and this hand and foot syndrome is a prominent feature of the infancy. Later on, it's not present.

MRS. MABRY: Well, what about later on? Say, in teenagers? What are their symptoms?

DR. DIGGS: Well, the symptoms, sickle cell anemia affects every organ of the body so the symptoms and signs of sickle cell anemia are manifold. In other words, there is no limit almost to the things that it can cause them But, the main trouble with sickle cell anemia so far as the patient's discomfort is concerned is the, are the what we call the sickle cell crises. At various intervals in the difference in different people in different numbers and the time it appears. But, the sickle cell crises, or episodes in which the patient has ...out of the clear sky oftentimes, very severe pains. And, the pains are in multiple parts of the body, but usually they are in the back or in the bones. As they say, "It bees bones." And, they put their hands on the bones. But, this pain is very severe and it makes them scream and cry and they, it's like an abscessed tooth or a kidney stone or gallstone colic. It's very severe pain and it makes them seek medical aid and go to the

emergency room and to go to the hospital. And, it's the type of thing that occurs over again and really is the curse of the people who have sickle cell anemia and that is one of the main efforts in research, is to try to find out how to prevent these crises and how to treat them after they occur.

MRS. MABRY: What kind of treatment do you recommend? For infants, or for adults in these painful crises?

DR. DIGGS: Well, the treatment I experience with the sickle cell treatment is that the main treatment is education of people to learn what they are dealing with and how to live with it because we really don't have any specific form of treatment. One of the contributions I think I've made is to try to develop an educational program and have the people stay at home when they don't have vascular lesions that cause severe damage. And to treat themselves at home because really there's no sense in them spending several thousand dollars in hospitalization every time they have a crisis, when they could do the same thing at home. What we recommend to do at home in the first place, is to keep warm, and to drink plenty of water and to take simple pain remedies like aspirin and Tylenol -- that type of thing, rather than to go into the narcotics which they may become addicted to. To keep up their nourishment but on the other hand, to know that if they have trouble with their...it affects their mind or their brain or if they have trouble with their chest and heart and lungs or if they have very severe abdominal pain with nausea and vomiting, diarrhea, that type of thing, that that's when they need to know that those

are the organs that you cannot wait with, that you've got to go to the hospital and...because they may be emergencies that have to be looked after. But the ordinary painful crises are types of things that should be simply treated. Of course, there are many researches being done. People are giving replacement transfusions and bone marrow transplants and that type of thing to these people and are trying all kinds of drugs. But, after the crisis starts, it is too late to do anything then. Then, the only thing you can do is to ameliorate the symptoms and sweat it out.

MRS. MABRY: Sweat it out.

DR. DIGGS: Um hummmm

MRS. MABRY: You know, some people think that sickle cell anemia is contagious. Can you catch it?

DR. DIGGS: Well, that's a natural fear that people have that you can catch the one disease from another but that is not true. You couldn't catch it any more than you can catch a different color of your eyes or different sex. In other words, it ... sickle cell is something that is in your genes. It's in your inheritance. It's a naturally occurring mutant that is transmitted from parents to children. So, there is no way in which you can catch it. You couldn't transfer it by transfusion any more than you could cause a person to grow horns by eating beef steak.

MRS. MABRY: Dr. Diggs, why did you feel the need to start a Sickle Cell Center here in Memphis?

DR. DIGGS: Well, when I came to Memphis and started to work on sickle cell anemia, no one was interested in it except the small group, my technologist and I at the University of Tennessee, but I became ... as a matter of fact, I became interested in sickle cell anemia when I was a medical student at Johns Hopkins University because I had a very famous professor, Dr. Huck, who did some of the early work on the genetics and I got interested in sickle cell anemia and drew some pictures of sickle cell anemia then. But, I didn't see any at the University of Rochester for three years. But, when I came here and saw the disease and the agony that these people had, I became interested in it and in being in pathology. we had autopsy cases of those cases, so I began to first to find out what was published, and very little was published; but that started one of the efforts that I made is to assemble the world, every word that was written, so with my own typewriter, hand pecking, I abstracted, not abstracted but copied word for word the papers that were written and that led to a continuing step so that over a period of years I assembled every word that was ever written by anybody in any language about sickle cell anemia and later on, that was put in the form of bound volumes - 63 volumes- that were given to the University of Tennessee Library. This project was financed by the wives of the colored doctors in Memphis, the Bluff City Medical Society, who helped me with the assembling of this material. So, we became interested in the assembling of the literature - what other people knew - and then

we tried to find out what we could find out. And, without any financial help because we couldn't get any at that time, Miss Bibb and I, a technologist, did blood work on these people and studied them in every conceivable way that we could imagine. And, we not only tried to study this disease ourselves, but we tried to get everybody else at the University interested in it. We thought that this was of interest to the orthopods... orthopedic doctors...because of the bone changes. They were interesting to the eye doctors because of the...they had blindness as one of the manifestations. They were particularly interesting to the neurosurgeons because of the brain lesions. The gastrointestinal people were interested in it. The radiologists, of course, had a big part to play. The pulmonary function people, the kidney people, Dr. Hatch and his associates, became interested and Dr. Etteldorf in pediatrics. So, so we attempted to interest other people in it. And, you asked about why we started a Sickle Cell Center. The Sickle Cell Center became a focal point in which we spotted and diagnosed and did the laboratory work on these patients and then passed these patients on to other specialists for the study of their own field of interest. And, that, that has made the Sickle Cell Center much more productive, I think, than it would have been if I had just limited it to those; in other words, I didn't try to monopolize. I tried to make available to everybody else that which they could help me and help the world and help the sickle cell patients mainly to come up with improvements in their way of living and happiness.

MRS. MABRY: Were there any other Sickle Cell Centers in this area when you started yours at U.T.?

DR. DIGGS: No, I think we were the first one who really started a Sickle Cell Center. As a matter of fact, the first center ...approach to a Center came when Mr. Herff gave me a research grant back in 1952-$10,000, to study sickle cell and enabled me to employ a Mr. James Childs who is a colored technologist, technician, to help me do the leg work and we brought people in from the...he used my car and he drove out and brought people in. He was my leg man, you might say, to get people back into the...for me to do various studies. And, following that, in 1958, the...well, as a matter of fact, the citizens of Memphis, the various civic clubs, the people at LeMoyne College, the people...nurse, colored nurses and civic clubs and that type of thing in fraternities and sororities gave me money. In other words, the Black community really was, and Mr. Herff, were the first ones who gave me financial support. But then Mr. Plough came along and in the name of St. Jude Hospital, gave me $10,000 to start a Fellowship in sickle cell and that led to the appointment of Dr. Plitman and Dr. Upshaw and later a Japanese doctor so we...so the ALSAC support which was around $64,000 over the next two or three years was really the beginning of... start of a Sickle Cell Center. The University gave me an old lecture room in the Gailor Clinic for...to house it in. And, we had some other rooms and, but with the ALSAC really, American Syrian Lebanese Associated Charities...St. Jude, were the people who got us off the ground so far as a real physical organization

of a Sickle Cell Center. Then we showed enough promise then by any research that we did and our Fellows did, to get the National Institute of Health interested. And in 1962, they came across, and then for the next ten years they ave us support, annual support, and then following that, Dr. Kraus took over and has continued up to the present time.

MRS. MABRY: That's Dr. A.P. Kraus, Sr.?

DR. DIGGS: Dr. A.P. Kraus, yeah. Dr. Alfred Kraus. And he is now the Director of the Sickle Cell Center in Memphis which is now finishing up its study of sickle cell as one of the Study Centers in the United States.

MRS. MABRY: Have we already covered the topic of pathophysiology of sickle cell disease?

DR. DIGGS: No, I don't think we can hardly begin to touch it in an interview like this because it affects every organ of the body. The, the...we haven't said anything about the anemia of sickle cell, for instance. Because these people with their cells built wrong are destroyed more rapidly in past in spite of the various attempts of the body to make this bone marrow productive but they still have anemia. So these people are weakened by their anemia. That affects all the organs of the body. They also are jaundiced. And, they also have attacks in which their liver becomes severely injured and they get a lot more jaundiced sometimes than they do others and they have gallstones very commonly. As we mentioned, they have all kinds of brain damage due to the infarcts in their brain. And then their lungs are involved in the plugging up of blood vessels there and their heart becomes involved and every

organ of the body becomes involved in some patients in some stage of the disease.

MRS. MABRY: Dr. Diggs, would you tell me about your work as Consultant at the Armed Forces Institute of Pathology in Sickle Cell Disease?

DR. DIGGS: Yeah. That's...started back during the war years. I was at that time, I was Clinical Pathologist at the Cleveland Clinic in Cleveland, Ohio; and although we had very few patients of sickle cell there, I was still interested in the pathology of sickle cell and asked permission of the Armed Forces pathologists to go there and study the pathology of the sickle cell cases and to utilize their rich accession of material that came from all parts of the world. Well, it so happened that Colonel Ash was...Dart, not Ash, but Dr. Dart was the Director of the Armed Forces Institute of Pathology at that time and he had been to Panama and he had collected a whole bunch of cases of sickle cell anemia, was interested in it, himself, but then he put it in a barrel and brought it back to Washington with him. But, he didn't have time to look at it so he just gave me that whole barrel full of slides to look at. Well, Dr. Colin Vorder Bruegge was a former student of mine -- worked with me in the laboratory, and he was there and we teamed up with Dr. Vorder Bruegge and started to studying all of these cases of sickle cell anemia, case by case, sentence by sentence, slide by slide. And for a period of years, worked on sickle cell anemia at the Armed Forces Institute of Pathology. It was very important to the Armed Forces so they appointed me as a paid Consultant for many years, as a matter of fact, and I still am a Consultant on a voluntary basis for sickle cell anemia; and,

am working on a syllabus on the anatomical lesions at the present time, hoping to finish it up someday.

MRS. MABRY: I'd like to ask you something about your interest being stirred by a patient way back when you first came to Memphis who was being operated on for appendicitis. Was there an incident with a Dr. McElroy?

DR. DIGGS: Well, there was (n't) a case of appendicitis. But, it was a case of a surgical condition that was of interest. We had a patient with sickle cell anemia and I felt what I thought was a big spleen. Rather, it turned out to be a big liver over on the left-hand side and it wasn't a spleen at all. But, people who had severe anemia and had jaundice associated with anemia and other diseases, hereditary spherocytosis, were profited sometimes if you removed this big spleen which was a destroyer of red cells and you could help to restore their balance and make them less anemic. So, I recommended that we remove the spleen on this patient. And, Dr. McElroy, who was the Chief of Medicine, went along with me and agreed on it so we planned to do the first operation of the splenic removal on a case of sickle cell anemia. At that time we had a surgical amphitheatre and all the medical students were assembled to see this historical event that the surgeons were going to remove the first case and Dr. McElroy told them about what they were going to do and what the theory was, and the surgeon, Dr. McGee, began to operate on...and opened up the abdomen and he couldn't find the spleen and he was all perturbed about that and he wiped the sweat off his brow and resected another rib and called in another Resident and he kept fiddling around and

he couldn't find the spleen and with all the medical students there to... watching him in his failure. And he got so disturbed about that, he finally stalked out and said he'd eat it if it weighed as much as ten grams. And, Dr. McElroy said, Well, if we had more competent surgeons, we'd be a little more tolerant of what was happening...that kind of a thing...which pleased the students very much. But, the patient didn't die soon after that operation, but did die later and came to autopsy and the spleen didn't weigh ten grams. It weighed seven and a half grams, and he didn't have to eat it and we have the spleen to look at. But that really was a spark that spurred me on in research because I tried to know why in the world that spleen had disappeared or had gotten so small. And that led me to borrow from other pathologists - not only in this country but from Africa - spleens that they had. So, my first real intensive study of the anatomical pathology was working out what the sequence of events were in the spleen that first was large and later became small and later, later on, Dr. Ching and I did an autopsy where we couldn't find the spleen - never have found it - in other words, we traced the place where it ought to be and made sections of a little scar tissue where it ought to be and it wasn't there. In other words, the spleen can actually disappear in these people on account of the fact that the sickled cells plug up the capillaries and the spleen just doesn't have blood supply and it just atrophies and goes away.

MRS. MABRY: Dr. Diggs, I believe that Dr. J.B. Herrick first identified sickled cells in 1910. Is that correct?

DR. DIGGS: Yes, I was ten years old when Dr. Herrick

first described the sickle cell and later on, I knew Dr. Herrick. As a matter of fact, I have known most all of the people that worked on sickle cell anemia and have been associated with them in various conferences and that type. Yes, Dr. Herrick was a famous Professor of Medicine at University of Chicago and he was mainly known for his work on coronary heart disease and occlusions of the vessels in the heart. But, like any good internist, he not only was interested in microscopic pathology but he actually looked at the smears under the microscope, his microscope. And, he saw that these cells were misshapen. And, he must have been a country boy rather than a city slicker because he said that these cells looked like your sickle. Well, most people don't know what a sickle is, but a sickle is a thing that you cut grass with. It's a long, slender, curved blade that you cut weeds and tall grass. He said that these cells were sickled shape. And that name, he didn't call it sickle cell anemia because later on, it was some ten years later it was called sickle cell anemia but he was the person who described the first case insofar as we know. But sickle cell anemia has been with us. As a matter of fact, the Africans, way back have always known that it was a disease that affected families and had realized it as an inherited type of condition. But, in the following...the next ten years or so, there were only fifteen or twenty articles that were written. It was only around 1935 or 40 where the disease really swung into general knowledge and interest.

MRS. MABRY: And, I believe you have taken the information from that beginning up to 1970 and, as you mentioned earlier, you have now a Sickle Cell Information Center. Would you tell me a little more about that and its translation into world languages?

DR. DIGGS: Well, as we said, we, we from the very beginning of my research efforts attempted to find out like you always do...rather than to repeat work and not give people credit for what they've done, we've tried to find out always what other people have known and then take it from there. So, the Sickle Cell Information Center is really just a continuation of this interest but it became a couple of rooms with file cabinets and three-ring binders and assistants and that type of thing. So, it became a, you might say, a library of information. Now, since I've retired and do not go up to the hospital regularly, this Information Center is less active; but I am continuing...trying to continue to mainly to keep up with that portion of the literature that deals with the clinical features and the anatomical features and leaving it up to other people to work out some of the more fancy type of chemical studies and physical studies and areas of basic research rather than of applied and clinical research. I'm mainly a practicing doctor interested in the medical care of patients and in the pathology rather than in the chemistry and physiology of a disease in its more advanced form.

MRS. MABRY: I've been told that you are internationally known for your work in sickle cell anemia and you've travelled to Japan; South America; Stockholm, Sweden; and other points in the world. Would you tell me some of the

most interesting experiences you've had in spreading your word of sickle cell anemia?

DR. DIGGS: Well, sickle cell anemia is a universal disease and it occurs in many races and it is of a great interest to everyone and the International Hematology meetings gave me the opportunity to present the sickle cell information in, as you say, in Australia, and in Japan, and in the South Pacific Islands. And, in England, and in France, and in Germany and Scandinavia, as well as in various workshops that we've given in this country. So, the main interest, the main incidence I think, has been the meeting of a people of like interest and like minds from Africa and from other countries and not only attending and hearing their speeches, but to...eating with them and being with them in social occasions, etc., so I think the most... the thing that popped to my mind now is the people that I've met and the inspiration that they've given me because of their confirmation and sometimes differences that they've had in the way that they looked at the disease and how it affects their people in contrast to the way that it works out in Memphis. But the sickle cell is international. As a matter of fact, the...one of the things that I've recently worked on has been the sickle cell trait in the Armed Forces. And, have studied the literature and have published this thing in the Aviation, Space and Environmental Medicine. And, very recently, this year. But, the requests for reprints that we've had have come from Russia and Germany and The Netherlands and France and Cuba and Brazil and many...we've had many more requests for papers related to this subject from foreign countries than we've had in this country; because this

Armed Forces journal is available to these people and everybody has an Army and everybody has people with the sickle cell trait who are functioning in those Armed Services. And, I think, although many people don't agree with me, that people with the sickle cell trait do get into trouble when they get into very severe stress situations like being way up in the Alpine Mountains or a kind of uncertain operation where great stamina is required, that the sickle cell trait people, although they are not handicapped very much; can, under very severe stress, get into trouble. And, we think that this is very important to the Army. Of course, sickle cell anemia and sickle cell disease and the disease(s), itself, they are not suitable for the Army any more than a person would be who had heart trouble or diabetes or lupus or some other disease, nephritis. They are not eligible for being in the Army. But, the sickle cell trait people should be taken in but they should be given special assignments, in my opinion.

MRS. MABRY: I see. I took a peek at your curriculum vitae, Dr. Diggs, and I know how old you are.

DR. DIGGS: Yeah.

MRS. MABRY: Is that correct? Is that 84?

DR. DIGGS: Yeah. I'm 84. I'll be 85 in...come January, yes, and I've been very fortunate because I've... at an age in which tremendous things have happened in medicine. Sickle cell anemia is only one of them but...so, but it's when you look back and try to write up what's...has happened and is happening in medicine it becomes almost stupendous. But, I am fortunate to have been healthy and to have had assistance

in the form of...Mrs. Diggs has helped me. Ann Bell, Dr. Kraus, and numerous people at the University of Tennessee have given me help. So, I'm fortunate to have had a chance to try to help other people with a very severe and disabling disease.

MRS. MABRY: Do you know roughly how many articles you have had published on sickle cell disease?

DR. DIGGS: I reckon it's pretty close to a hundred. I mean when you put 'em all together, counting abstracts and the various workshops, things I've published and we've bound those subjects, and those various papers in a journal. That is, I think will be given to the University of Tennessee but they are now in my library. But, I'm still working on it and now with the assistance of Miss Bell and Dorothy Stern, I'm writing a paper on the morphology of human blood cells of which sickle cell anemia is one portion. One of the beautiful drawings, new drawings that are in that fifth edition of that atlas of blood cells, deals with the sickle cell trait in the moist preparation by Dorothy Stern. And, Dorothy Stern is a famous artist at the Memphis Art Academy. But, she is a person who is not only is a scientist and knows how to look and has eyes to see with, but she has almost an amazing ability to draw what is there. And, her painting of the sickle cell trait is a classic.

MRS. MABRY: If you could tell the people in Memphis who would want to know real information now about sickle cell anemia, what would you tell them?

DR. DIGGS: Well, I think that we would refer them to the National Institute of Health, I think, which is attempting to be the assembling place for information. I think they would go to the library associated with the National Institute of Health as being the one major source of information. I think that if they're interested in the older literature and there is lots available literature that... in our bound volumes at the University of Tennessee would be... give them every word that I could find at least as source material for papers that have been published. For papers of the future, they would go to the library and look up in the Quarterly Cummulative Index, month by month, and year by year and see what's happened new since 1980.

MRS. MABRY: Dr. Diggs, what do you think about the future for Sickle Cell Centers?

DR. DIGGS: Well, that's a good question because I think the future developments of the expenditure funds and energy should not be directed along exactly the same lines as they have been in the past. There will always be a need for basic research. That's number 1, I think. But, we think that that should be financed by the endowments and by Federal Funds and by special research grants and it should not be attempted by every group. We think that it was a time when it was necessary to do screening tests and examine thousands of people and find out which ones had the sickle cell trait and educate them. We still think that that needs to be done but we do not think that you should spend over thousands of dollars repeating those same tests. But, those tests should be made

available and are available and people should finance it themselves. THey should have those tests done like you'd like to know what their blood groups were. But it should not be a matter of major expenditure. I believe that the main efforts of the public in financing it should be in education. In educating the people about what it is and what it does and what you could do about it and what you can't do about it... to make...I would think, a Sickle Cell Center of the future should be a place where there was a scientifically trained person, a nurse, or equivalent who would answer the telephone and could tell the people ...not give them the medicine or do tests on them but tell them where they could go to get it and how much it was gonna cost and whether it's available or not. I think that the Sickle Cell Center in Memphis, for instance, should be part of the Community Chest. That it would be logical as some communities have done, have made the Sickle Cell Center an educational center financed by the Community Chest ...the United Way...and to make it an information source just like you do for Alcoholics Anonymous or Poison Clinic and that type of thing; so that they could tell people whether to stay at home, whether to go to the doctor whether to go to...how much it's going to cost and also to pave the way to the clinic when they're going so that they would(n't) be looked after promptly. So, the Sickle Cell Center of the future should not attempt to treat patients because you can't treat crises because they require days of treatment. They require all kind of facilities. You can't...you shouldn't attempt, I don't believe, to have a special clinic for every different kind of disease. Sickle Cell Centers should come into the main stream and be treated like every other

disease by doctors and every doctor, general practitioner included, and all specialties, should know about sickle cell diseases and their complications just like they know about nephritis and diabetes and pneumonia and brain tumor and everything else.

MRS. MABRY: You don't plan to stop doing your work, do you?

DR. DIGGS: I don't plan to stop. No, I don't plan to stop. I don't think other people are going to stop because we are tremendously inspired almost by the research effort that is not only continuing but is expanding. St. Jude is coming into the picture now. I think the future of Memphis is...because with Dr. Kraus's retirement and my retirement and since sickle cell mainly affects children, that I think the major research thrust in Memphis will be carried on by the people at St. Jude.

MRS. MABRY: Thank you so very much.